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EPIDEMIC INFLUENZA.

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BY

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I AM not aware of any reason why I should have been asked to open a discussion to-night on the subject of Influenza, except this one: that as Physician to Clifton College I have had an opportunity, during the months of January, February, and March, of witnessing an outbreak of this disease among the members of the School—an outbreak which has affected more or less all classes of persons in the School-community, masters, boys, officials, and servants.

It is not my intention to occupy your time in discussing the history of this remarkable malady. The literature on the subject is no doubt familiar to you all.

As my remarks are only intended to be introductory to the discussion which will follow, I shall confine myself

to a brief account of the recent epidemic as it came directly under my personal notice.

I shall state how and where it began in the School, and the manner of its spread and distribution. I shall put before you the total number of cases which have occurred in the College and in each Master's House separately. I shall then speak of the clinical features of the disease—its symptoms, duration, complications, and sequelæ; and I shall finish my paper with a few general propositions which may perhaps furnish some points for your consideration and discussion this evening.

The following table will indicate at a glance the parts of the School in which the epidemic appeared, either lightly, severely, or not at all.

Table showing Percentage of Cases of Influenza in the Masters' Houses in Clifton College.

	No. of Boarders.	Cases of Influenza.	Percentage.
The College—Nine Houses.			
A.	11	5	45.4
B.	15	4	26.6
C.	48	5	10.41
D.	48	7	14.50
E.	48	20	41.66
F.	48	8	16.66
G.	48	10	20.85
H.	10	1	10.00
I.	73	28	38.35
Total	349	88	25.41
Junior School.			
A.	40	1	2.50
B.	25	3	12.00
C.	8	0	0.0
Total	73	4	5.30

PREPARATORY SCHOOL.

A.	13	6	46.15

SUMMARY.

College	349	88	25.41
Junior School	73	4	5.30
Preparatory	13	6	46.15
Total	435	98	22.83

TOWN BOYS.

	No. of Boys.	Cases of Influenza.	Percentage.
College	137	62	
Junior School	64		
Preparatory	33		
Total	234	62	26.40

Total Strength of the School.	*Total No. of Cases.*	*Percentage.*
669	160	23.9

The first cases of influenza occurred on the 27th January, just a week after the opening of the School Term, in the Preparatory School and in letter I House. Two cases were admitted to the Sanatorium from the former, and four from the latter—six cases in all,—on the first day of the epidemic.

The progress of the disease from this time was rapid, and in the third week of the Term it had reached its height. You will observe from the table some peculiarities about it. You will remark the extraordinary immunity from it which the Junior School enjoyed in comparison with the Upper School, or College proper: only four cases occurred among the boarders in the Junior School out of a

strength of 73; and in the largest Junior House, containing 40 boys, there was only one case. You will also observe that in the Upper School the main weight of the epidemic fell upon three Houses marked in the table E, I, and A; and it also severely affected the little boys in the Preparatory School, whose ages are from 8 to 10.

In the House marked E 19 cases occurred within a few days, and four servants were attacked; and I felt it to be my duty to advise the master of this House to give the parents of the boys the option of removing them to their homes for a fortnight, if they thought it desirable. About ten boys went home. The remainder stood their ground.

You may naturally ask, Were there any local circumstances to account for the rapid spread of the disease in these three Houses: were they in any sense in an unsanitary state? I think I can give a decided negative to the question. Every boarding-house is examined once every Term by a competent sanitary inspector, acting under my orders. I think I can safely affirm that every House is in a good sanitary condition, while some are models of good sanitation. While I cannot charge the prevalence of the epidemic in these four Houses to any special sanitary fault, I think there is an undoubted tendency in the disease to attack with great rapidity persons who are congregated in numbers together.

With regard to the clinical features of influenza, I have divided the cases which have come under my notice into three classes: (1) Mild uncomplicated cases; (2) Severe uncomplicated cases; and (3) Cases complicated with lesion of some organ.

Out of the entire number of 98 cases, there were six

severe uncomplicated cases, and eight complicated with dangerous lung-lesion.

There was a great similarity in the onset of the symptoms in the mild cases. The boys were attacked as a rule suddenly, either when at work in school or after games of football or fives. Sometimes the attack came on early in the morning, sometimes late at night. The premonitory symptoms even in severe cases appeared to be of very short duration, the first symptom being generally chilliness or giddiness. In one of the severest cases the boy had been playing hockey on the Down in the afternoon, came home, changed his clothes, felt apparently well at six o'clock, joined his school-fellows at tea, and made a hearty meal. I was sent for at eight. He had been seized with a rigor, and severe symptoms of influenza had developed in that interval. In the mild cases, the symptoms when developed were generally headache, pains in the loins, sides, and thighs, pyrexia, and great prostration.

In all my cases, whether mild or severe, catarrhal symptoms were conspicuous by their absence. I observed red and suffused eyes occasionally, but coughs and general symptoms of catarrh I seldom observed. In one case there was pharyngitis.

In the mild uncomplicated cases the temperature seldom exceeded 102°. But headache, principally frontal, and pains in the chest, back, and thighs, were universally present, together with an extraordinary amount of prostration and weakness—a condition entirely out of proportion either to the severity of the fever or its duration, but indicative of a profound and sudden impression having been made on the nervous system. This was well exemplified in the case of a boy named B——. In this

case the fever only lasted two days, the temperature never reached 100°, and was subnormal on the third day; and yet the boy, otherwise a healthy lad of 17, was so prostrated he could not stand or walk for nearly a week; and although his case was entirely uncomplicated, he did not recover his strength sufficiently to enable him to resume his school-work, and I was obliged to send him home for the remainder of the Term.

In the six severe uncomplicated cases, I could discover no lesion of any organ. The symptoms were those of a fever pure and simple; but a fever acute and severe, lasting from four to six days, ushered in by chilliness and rigor, accompanied by headache of a very severe character, and the usual pains about the trunk and thighs, but in an intensified form. There was great restlessness—in some cases insomnia, and a general feeling of misery and discomfort.

In some of these instances I observed severe pain in the eyeballs, which were tender and tense. In most of them there was very little disturbance of the digestive organs. Constipation was occasionally present; but as a rule the tongue was unusually clean.

Certainly the most prominent feature was great depression and debility. Fortunately, vomiting was seldom present, so that food and stimulants could be freely administered. As I have said, the duration of the fever in these cases was from three to seven days. The defervescence when it occurred was sudden and sharply defined, the temperature falling at once to the normal point, or nearly so, often becoming subnormal and remaining so for several days. With the fall of temperature, the rapid pulse, headache, and pains dis-

appeared, but leaving still to be combated the sequelæ of which I shall presently speak.

In these cases the highest temperature recorded was 105.4°; but the curve generally was from a maximum of 104° to 101° for five or six days, and then a drop to the normal point or below it.

I think these severe uncomplicated cases exemplify the hypothesis that influenza is a specific fever depending upon a blood-poison.

When the thermometer indicates a body heat of 105 degrees or more, we are usually on the alert to discover some organ affected with inflammation. But in these cases there was nothing of the kind. As soon as the fever ceased, the patient was relieved and no lesion of any organ could be discovered. The poison, whatever its nature may be, had passed through its life-history, had been planted, had developed, culminated, and died, leaving, it is true, behind it unmistakable evidences of its power, but no permanent damage.

I now come to speak of the third class of cases which have come under my notice—cases of influenza, complicated with inflammation of some organ, either the lungs, bronchial membrane, pleuræ, or with an inflammatory condition of the bowels, or with lesion of the cerebro-spinal system.

I believe I am right in stating that in by far the majority of cases in which complications have arisen in the recent epidemic, the lungs have been the principal organs affected. Either pneumonia, pleurisy, or bronchitis has in a certain number developed early in the course of an attack of influenza, and from one or other of these causes that mortality has taken place which, during the months of December, 1889, and January, February, and

March, 1890, has produced a large increase in the death-rate in many of the cities and towns of the kingdom.

I think there is some risk during the prevalence of epidemic influenza, especially during the existence of cold weather, of confounding cases of simple pneumonia which might have occurred without the presence of influenza at all with cases which owe their origin distinctly to the epidemic.

But in addition to the fact that there are generally distinct symptoms of influenza before the development of pulmonary mischief, the distinguishing feature of the inflammation which complicates it is the sudden violent and rapid progress which characterises the inflammation, and the formidable symptoms which accompany it.

Whether we have to deal with bronchitis or pleurisy, or with broncho- or croupous pneumonia, we are confronted with a train of symptoms of a very aggravated character. We have, in fact, pulmonary inflammation, serious enough in itself, but intensified by the presence of a specific fever. In other words, we have pneumonia or bronchitis or pleurisy *plus* influenza. Life is placed in the greatest peril in the course of a few hours, and the tendency to death from extreme prostration and cardiac failure requires the most incessant vigilance on the part of the physician and nurses.

This is well illustrated by the following case: C. J., a healthy schoolboy aged 16, was attacked with influenza on the 10th March. The symptoms were not very severe at first: he had headache, pains in the limbs and back, and his temperature was not above 101°. On the morning of the 12th he ate a good breakfast, and was in good spirits. At 11 a.m. he was seized with a rigor, his temperature rose to 105.3°, respiration became rapid, and

pulse 112, with a marked intermission. The same evening the usual signs of broncho-pneumonia were found in the base of the right lung. The disease rapidly increased, and ran its course with great gravity and severity; respiration rose to 40 in the minute, there was great restlessness, severe pains in the side, insomnia, and loud and incoherent delirium. These symptoms lasted for six days; the pulse was extremely weak and intermittent, and the tendency to death from cardiac failure placed this boy's life in imminent peril. But sudden and rapid defervescence took place on the seventh day. In this case the physical signs were more those of broncho- than of croupous pneumonia. There was a great deal of coarse crepitation at the base of the right lung, and an immense quantity of thick adhesive rusty sputum was coughed up.

This case was complicated also with acute abdominal tympanites, a symptom which gravely increased the severe dyspnœa. At the suggestion of my friend, Dr. E. L. Fox, turpentine was administered, with the best possible results. Recovery was rapid and complete, and there were no sequelæ.

The next case, that of W., was the worst, and terminated fatally. The illness began on the 1st of March with influenza; but on the 3rd the most intense form of croupous pneumonia set in, embracing nearly the whole of the left lung. From this time the symptoms were most formidable. Although the temperature was not so high as in other cases, only once having reached 104°, yet the other symptoms were so severe as to give one the impression of profound septic poisoning:—wild incoherent delirium, extreme prostration, a dusky aspect, insomnia, respiration over 50 in the minute, and pulse 120 to 130; urine, slightly albuminous. The symptoms were in fact

of a malignant character, and nothing in all probability would have prevented a fatal issue.

The case of W. B. is another example of pneumonia complicating influenza. The symptoms of inflammation of the right lung set in on the third day. The temperature suddenly rose to 106.2°. There was violent vomiting, continued for several hours, and very great prostration; but there was no delirium. The case ran its course satisfactorily; but convalescence was retarded by severe and prolonged debility, coupled with anæmia.

I do not think it necessary to give you details of all the cases of pneumonia which occurred during the epidemic, as there was much similarity between them; but I may mention the case of R. W., a lad of 17, exceedingly tall for his age, measuring 6 feet 4 inches. He was attacked with influenza on the 4th February. The symptoms were very severe from the first. This was a second attack: he had had the disease in a mild form during the Christmas holidays. There was very severe headache, and the pains in the chest, sides, and legs were of the most intense character. There was profuse sweating, restlessness, and some delirium, but not much. About the fourth day there were physical signs of inflammation in the left side of the chest, which was diagnosed as pleuro-pneumonia; but in observing the progress of the case it became evident that the left pleura was principally engaged. Fluid began to collect in the left side to a considerable extent, displacing the heart. After treatment for four weeks, it became pretty evident that the case was one of empyema. An exploratory puncture was made; and having ascertained that the contained fluid was purulent, an incision was made in the chest by Mr. Harsant, and about a pint of pus removed. A drainage-tube was

inserted, and the case was treated by Mr. Harsant with the usual antiseptic precautions. The result has been satisfactory. Immediately after the operation the symptoms all began to improve. The temperature fell to the normal point and appetite returned. The wound has now completely healed. The patient is now quite convalescent and has gone to the seaside. Some damage was left on the affected side; but on the last occasion when I examined him great improvement had taken place. Respiratory sounds were heard fairly well at the base and apex of the left lung, although rather feeble in the middle part on which the weight of the inflammation fell.

I have two other cases which were under my care (not among the College boys) which I would like to mention. I was called to see a lady, aged 30, married, one morning towards the end of February. I found her with the usual symptoms of influenza; but being a delicate and rather anæmic woman, her prostration and weakness were very great. I thought it right to see her again at mid-day. I then found her suffering from violent diarrhœa: I think she had thirteen actions from the bowels during the day. Just as I was going to bed that night at eleven o'clock, her husband came to me in great alarm to say his wife was bleeding profusely from the bowels. I went at once to the house, and found that she had passed about half-a-pint of blood *per anum*. I placed her upon frequent doses of hazeline. There was no further hæmorrhage, and the diarrhœa ceased next day. There was very severe pain and tenderness over the cæcum. These symptoms were followed by such severe prostration, that I felt considerable alarm for her safety. This, I presume, was an instance of the gastro-intestinal form of influenza.

One of the matrons in one of the College boarding-houses, a woman aged 42, was attacked with influenza on the 15th March. She had headache, feverishness, and some bronchial *râles* over the chest. In three days she was much better, got up, and attempted to perform some of her duties; but she was suddenly seized with loss of motor power in the lower extremities: she could not stand, and she was unable to move her legs off the bed. There was also loss of motor power in the arms, but not so marked as in the legs. There did not appear to be any loss of sensation. The knee-jerk and plantar reflex were entirely absent. There was constant tingling in the soles of the feet and in the palms of the hands; there was also tingling in the lips, on the dorsum of the tongue and the left side of the palate; there was some difficulty in deglutition; there was left facial paralysis, but the orbicularis palpebrarum muscle was unaffected; the mouth was drawn to the right side, and the left eyelid did not close completely; food collected in the left side of the mouth; there was no giddiness and no definite sense of constriction round the waist.

These serious symptoms lasted for, I think, five weeks; but gradually and slowly passed off, and the patient has completely recovered in every respect, except that the knee-jerk has not yet returned.*

I may here mention a case, the notes of which have been furnished to me by my son, who is Resident Physician of St. George's Hospital. It was the case of a distinguished student of the Hospital, who, after an attack of influenza, developed paraplegia, and died after a week's illness. The case was considered to be one of myelitis; but at the *post mortem* examination no disease of brain or

* The question is, Was this a case of acute ascending Landry's paralysis?

spinal cord was discovered. There was a great quantity of muco-pus in the medium and smaller bronchial tubes, and an immense quantity of petechial spots scattered over the surface of both lungs.

Much has been written about the cutaneous rash which is said frequently to accompany influenza, and which gave rise to the suspicion at one time that the epidemic was one of Dengue or dandy fever. I have only seen a rash in one instance, and then it was not very well defined. It appeared as an erythematous evanescent rash on the face in one case on the second day of the attack. In very young patients I believe it is occasionally seen. My son, who has seen 360 cases during the epidemic, tells me he has only seen the rash in young children. I have seen an eruption of herpes labialis in several cases, even in the mild ones.

With regard to the sequelæ of influenza, the most prominent and most fatal have been from pulmonary inflammation. For a considerable time after even a mild attack of influenza patients are liable to attacks of pneumonia, bronchitis, or pleurisy, and from this cause mainly the mortality has arisen. Probably this may have been owing, in many instances, to imprudence on the part of patients in going out too soon after an attack during the prevalence of cold weather. But undoubtedly there is a marked liability to pulmonary inflammation after an attack of influenza has passed off and the patient is apparently convalescent.

Then another very important and troublesome consequence of it is, the persistent weakness and debility which results from an attack. Even in the young, strong, and healthy subjects, with whom I have had principally to deal, this feature was most prominent. What is the

nature of this asthenia? It seems to me that it arises mainly from cardiac weakness; and I observe that Dr. Wilks has drawn attention to this fact in a recent number of the *Lancet*, giving four instances where death ensued from heart-failure after recovery from influenza, without the presence of any organic lesion whatever. The fact is, that from the beginning to the end of an attack of influenza, throughout convalescence, and for many weeks after, the pulse is poor, weak, and often intermittent, and the temperature often subnormal.

Then another of the troublesome sequelæ of this disease is mental depression, lowness of spirits, an indifference to the usual interests of life which is difficult to shake off: and I know at least of one instance in which melancholia followed upon an attack of influenza; and Dr. Bertillon, chief of the Statistical Department of Paris, states that suicides increased 40 per cent. during the prevalence of the epidemic.

Anæmia, or rather spanæmia, is another consequence which I have distinctly met with; and I need not remind any who have been dealing with the epidemic of the many forms of neuralgia which have presented themselves—frontal, temporal, facial, and especially post-orbital—the last, in my experience, having been the most severe and persistent.

I can well understand how serious must be the results of this disease in those cases where there has been previous chronic disease of the lungs, such as bronchitis or phthisis. But such cases have not come within the range of my recent experience, and I must leave others to speak of them.

Now as to Treatment. The mild cases required hardly any medicinal treatment. I followed the fashion frequently,

and gave antipyrin where the headache was severe or the temperature high—5, 8, or 10 grains, according to the age of the patient, every two hours. I believe it relieved the headache and reduced the fever a little; but I never pushed it far. I avoided salicylate of soda religiously: there was enough cardiac depression without it. As soon as the fever abated, and indeed often before that, I gave quinine and placed the patient on a generous diet, with champagne or burgundy. In the severe and complicated cases, the whole treatment was directed to avert the tendency to death from cardiac failure. Stimulants were freely administered with food, and ammonia, bark, ether, and digitalis were given according to circumstances. But what I relied on most was the assiduous and devoted care and attention of an excellent matron and a staff of admirable nurses, supplied to me by the Royal Infirmary and General Hospital.

For the relief of the severe neuro-muscular pains in the chest, sides, and thighs, I used only one remedy—a turpentine fomentation—and found it unfailing; it always gave immediate relief.

I have now put before you—very imperfectly, I am afraid—an unvarnished account of my own personal experience in the recent epidemic. You will observe it is an experience limited principally to one class—to healthy schoolboys. With reference to the effect of influenza on other sections of the community—on those more advanced in life, on the aged and infirm—I hope other members will favour us with the results of their experience.

Let me now, in conclusion, draw your attention to one or two propositions, which may possibly serve as points of interest to discuss—not that I have any wish to limit the discussion to these alone, but because they seem to

me to have a somewhat practical bearing on the subject, and by gathering the collective experience of our members on them we may possibly learn something from the past which may help to guide under similar circumstances in the future.

I. What is the nature of influenza? Is it a specific fever? or is it merely catarrh in an epidemic form?

To that question I would reply, for my own part, that its natural history, so far as we know of it, and its clinical features, point to the hypothesis that it is distinctly a fever depending on a specific poison introduced, we do not know how, into the blood—a poison with a brief life-history, but producing sudden and often serious results on the nervous system and secondarily on various organs in the body.* I think that it is not merely an epidemic catarrh, as it appears that symptom has only existed in about 10 per cent. of the cases. But while I think the weight of evidence seems to prove its specific origin, the search for any distinctive germ or microbe pertaining to influenza has, so far as I have been able to ascertain, proved fruitless.

II. Whence is its local origin, and its mode of diffusion and distribution?

I am not going to attempt a solution of this question: I throw it out for the consideration of those who have made epidemiology their special study. It would seem that its starting-point is somewhere in Eastern Siberia; that it radiates in a direction from N.E. to S.W.; that it suddenly bursts like a thunderclap upon cities and crowded communities; that it travels with a rapidity far faster than

* What the nature of the poison may be—whether a germ or contagium vivum, or whether a miasm of telluric origin, malarial and air-borne—we cannot say.

is explicable by the conditions of human intercourse. We hear of it to-day in London, a few days later in New York, and after sweeping over the continent of the West it leaps back to India.

III. Is influenza in any sense a contagious or infectious fever?

I think it is a doubtful question. There are arguments *pro* and *con*. We see large numbers of persons who are thrown much together by the circumstances of their lives —postmen, employés in different places of business, soldiers in barracks, boys and girls in schools—struck down suddenly, almost too suddenly to admit of contagion being the cause. On the other hand, we find a large number of nurses and other attendants on the sick contracting it (there were over twenty nurses at one time ill with it in St. George's Hospital); and I certainly think it has a tendency to fix itself in houses, and to affect more or less every one of its susceptible inmates, either at once or in succession.

Lastly: What lessons can we learn from the recent epidemic? Can anything be done in future to stop or modify it? Is segregation of the sick possible or desirable? We take every precaution in the face of an epidemic of cholera —do we reflect that influenza is a disease which kills a larger number of people than cholera does, on account of its much more general distribution?* What is our duty with regard, for example, to communities over which we may exercise professional control?

Time will not permit me to say more, even if I wished to do so. I now leave the subject in your hands, not doubting that the discussion will lead to further elucidation of a disease the nature of which is still shrouded in much

* Graves's *Clinical Medicine*.

obscurity; which appears to be but little controlled by the laws which govern most epidemics; which is uninfluenced by sanitary precautions, or the neglect of them; which is independent of the vicissitudes of temperature, of climate, of prevailing winds, or the peculiarities of situation; which presents aspects of a perplexing character—attacking men in a much larger proportion than women and leaving young children comparatively free, spreading among poor and wealthy alike, suddenly overshadowing entire communities and continents in its progress, and leaving in its track very disastrous results.

THE BRISTOL INFIRMARY IN MY STUDENT DAYS, 1822—1828.

BY

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I WAS elected a house-pupil, or apprentice, to the Infirmary, and began my residence there on March 19th, 1822, being then 15 years and 8 months of age.

The house-pupils were then elected by the subscribers or trustees; and if there was more than one candidate, there was a canvass, and election by voting.

We were apprenticed for five years to the Committee or Governing Body of the Infirmary, and to the resident medical officer for the time being. He was then called the house-apothecary. The fees paid by my father were 150 guineas to the treasurer of the Infirmary as a premium: 30 guineas a year for lodging, boarding, and washing, and 40 guineas as a fee or premium to the house apothecary. There were three of these house-pupils; and as the situation was in high repute, vacancies were always filled quickly, and sometimes contested. There were fifteen surgeons' pupils, each of the five surgeons being limited to three. These were selected or chosen by the surgeons themselves; but each pupil had to sign a declaration of conformity to the rules and regulations before he was allowed to attend the practice of the Infirmary, which was a large, well-appointed provincial hospital, making up 200 beds for in-patients, and claiming

to be the oldest provincial hospital in England. It was also the only general hospital in Bristol. The pupils had abundant opportunities of getting a good practical knowledge of medicine, surgery, and anatomy.

The in-patients were about equally divided into medical and surgical cases; the former being in the wards on the first floor, the latter on the second. Each floor was divided in the middle by strong iron gates, which were always left locked at night; female patients being on the one side, and males on the other. There was an average of about sixteen accidents or casualties every week. These were always admitted at once, without any recommendation. Many of them were severe and complicated, and some required immediate consultation or operation. When this was the case, the surgeon for the week, or all the surgical staff were summoned at any time, day or night. One pupil of the surgeon for the week was in charge of casualties, and was always summoned for every case, however slight, although he did not sleep in the house; and it was left to his judgment to summon the surgeon for the week. The resident medical officer and his pupils had nothing officially to do with the treatment of the surgical patients. The surgeons were very jealous of any interference on their part. Notwithstanding this feeling, however, it was very common for the pupil in charge to ask one of the house-pupils to act for him at night, and sometimes by day, after the usual visit and daily work of the Infirmary were over. We house-pupils were always ready to undertake this work, and I got a great amount of practice in the treatment of wounds and the slighter injuries in this way during my apprenticeship. The care of the medical wards, involving the treatment of medical cases, was the special charge of the

resident medical officer, under the physicians. He went regularly round the medical wards, seeing every patient, every morning after breakfast, his two senior pupils going with him, and also some of the surgeons' pupils, who paid a special fee for that privilege. The resident medical officer, or one of his pupils, always attended the physicians in the out-patient room and when they visited the wards, writing their prescriptions, either in books for the in-patients, or on pieces of paper for the out-patients. The junior house-pupil was chiefly engaged in the dispensary or in keeping the books, and giving the matron an account of the changes of diet, &c., which he took down in all the wards every morning. He had, however, the privilege of seeing all operations and *post mortem* examinations.

There were frequent operations at the Infirmary of almost every kind. As many acute and fatal cases were admitted, and there was an autopsy in nearly every case of death, there were abundant opportunities of getting a practical knowledge of all the viscera, and also admitting of superficial dissections of many parts without any apparent injury or disfigurement of the body. It will be evident from this sketch that a diligent pupil, who kept his eyes open and his hands and fingers well employed, had a grand opportunity of learning all the practical details of his profession.

As in those days the heroic method of treatment was in the ascendant, and many drugs were used, the dispensing department of the Infirmary was a very important one. For this work there were a dispenser (called Cross), a laboratory man, and a shop-boy, besides the house pupils, who were all supposed to assist in the dispensary; but only the junior had his chief daily work in the dispensary. Nearly all the preparations for dispensing,

and many of the chemicals, were made in the laboratory.

There was no Medical School in Bristol in my time. A course of lectures on anatomy was given every winter by Dr. Wallis, in a house in Lower College Green, assisted at a later date by Dr. Riley. These lectures were attended by several of the Infirmary pupils; I attended some of them. I remember one winter we supplied a sufficient number of subjects for dissection from the Infirmary dead-house, by removing the bodies from the coffins and putting in some substitute. There were also occasional lectures on chemistry and botany given by Mr. Herapath. At that time the College of Surgeons did not recognise the certificates of these lectures, or the medical or surgical practice of the Infirmary. But the Apothecaries' Hall admitted both.

There were two nurses to each of the wards, a day and night nurse; the former was the superior, and in charge of the ward, and sat up until 11 or 12 o'clock each night, after which the night nurse took charge of the ward for the rest of the night. The night nurse did most of the cleaning and scrubbing and drudgery of the ward. Most of these were quite young and inexperienced women. Many of the day nurses were well qualified and efficient, judged according to the requirements of a nurse at that time. All the nurses were of the class of domestic servants, and there was no head nurse. All were under the superintendence and authority of the matron, who had also, I believe, the full power of appointment and dismissal.

The house-apothecary and three house-pupils had their meals with the matron (Mrs. Davey), in her sitting-room, which was also her store-room for linen, &c., and from which her bedroom opened. The pupils had no

other sitting-room except their bedrooms, and these were not private. For some time after I went to the Infirmary, I slept in a double-bedded room with a fellow pupil (J. Butter). The medical officer had a separate sitting-room and bedroom adjoining. All these rooms were on the ground-floor, on a level with the entrance-door.

The medical and surgical staff of the Infirmary consisted of four physicians, five surgeons, and the resident medical officer or house-apothecary. I will record some recollections of these in succession, and of their method of treatment and practice.

But, as in duty bound, I will give first a slight sketch of my immediate master, Mr. William Swayne. He was not a very young man, over 30, I should think, when I first knew him. He was a very quiet, silent man, very clever, and very well up in his profession. He had little intercourse with his pupils, except in the way of their work; and we saw very little of him, except at meals and in going round the wards with him in the morning, which privilege I did not enjoy during my first year. All the medical and surgical staff had a high opinion of Mr. Swayne's abilities, and often took him to see their private patients with them. He was a very sedate, self-reliant, gentlemanly man, and, I should think, of superior general knowledge and culture. But he had some sense of dry humour, which showed itself occasionally at our meals. He was very regular and moderate in his eating: for his breakfast he always had coffee, one boiled egg, and two slices of bread and butter, which one of his pupils cut for him. He scarcely ever spoke at meals, except to ask or answer a question. But he smiled occasionally at any amusing remark or matter that struck his fancy.

Mr. W. Swayne had an elder brother in practice in

Bristol, who had a high reputation in midwifery practice. Two or three years after the commencement of my apprenticeship, poor Mr. Swayne had symptoms of incipient phthisis. He was sent a voyage to the West Indies, a common practice in such cases at that time, but returned without any durable benefit, and died at the end of a year. Mr. W. F. Morgan held the situation for him until his death, and was appointed as his successor. He was my first cousin, and some years after my brother-in-law, and was subsequently surgeon and consulting surgeon to the Royal Infirmary. He must have been personally known to many of the present members of the profession in Bristol and Clifton, as he died in December, 1872.

I will now try to give a slight sketch of each of the physicians and surgeons in order. This may be interesting to the present generation of the profession. Indeed, so great is the change in the theory and practice, both of medicine and surgery, since the date of which I am writing, that my record has almost an archæological interest.

The physicians and surgeons had each and all a marked individuality of character and practice. The observation of their different modes of treatment, and their results, especially of the medical cases, by the physicians, was not the least useful part of the medical education of the pupils. That was my experience.

Dr. Andrew Carrick was the senior physician. He was a tall, sedate Scotchman, grave and gentlemanly in appearance and bearing; kind and gentle and painstaking with his patients at the Infirmary, with the out-patients as well as with those in the house. He would take from one to two hours with his out-patients, on the two days of each week on which he attended, to see and

prescribe for them, which he very rarely missed, sometimes trying the patience of the resident medical officer or his pupil, who sat by his side and wrote his prescriptions on slips of paper, and also of those who waited to dispense them. His treatment was essentially of the depleting and lowering character. He was specially a great bleeder. The little scraps of paper with V.S. ad. ʒxij., ʒxvj., ʒxx., &c., often amounted to ten, fifteen, or twenty on his out-patient days, keeping the pupil for the week pretty fully occupied. He also prescribed purgatives, mercurials, and nauseating medicines very freely. Every acute case admitted into the house under his care was pretty sure to be bled freely, and repeatedly, if the blood was buffed or cupped, purged by calomel and colocynth and black draught, followed by saline antimonial mixtures every four hours, and a low slop diet. The same treatment, with little variation, was adopted in cases of fever (which were then freely admitted into the general medical wards and mixed with the other cases); and in cases of acute rheumatism, as well as in all cases of acute inflammations. Dr. Carrick went round the wards to see his in-patients with a long, serious, stately stride, spoke always gently and kindly to his patients, and occasionally interposed some little word of religious comfort or advice. I think he was generally a favourite with the pupils, except that some of them complained of the work he gave them in the bleeding line, and the senior house-pupil was sometimes impatient of his long attendance on him with his in- or out-patients. Dr. Carrick had a large private and consulting practice. He lived in a large house at Clifton, near the Down I think. He drove a somewhat old-fashioned chariot, with a pair of steady old horses driven by an old coachman. He always came to the Infirmary

in his carriage, and many a weary hour his old horses and coachman must have had to wait for him in the street. Dr. Carrick was a well-informed man in general literature, as well as in his profession. He was kind and courteous to all, and was, I think, generally liked. He was in the habit of inviting all, or a large part, of the medical men of Bristol and Clifton to a dinner-party at least once a year. He kept up the observance of St. Andrew's Day by a dinner-party. From his occasional serious words to his Infirmary patients, he was, I believe, a good Christian man, as well as a kind and courteous gentleman. He attended Mrs. Hannah More in the latter part of her life, and was, I think, a personal and valued friend of hers.

The next physician in order of seniority was Dr. J. E. Stock. He was in appearance and manner and mode of practice a complete contrast to Dr. Carrick. He was of middle age, rather short and slight, somewhat loosely dressed, with a slightly shambling walk, and a rather indecisive manner and address. He was, I think, rather short-sighted, and had a habit of half closing his eyes, or pushing up the lower lid of one of them, when he specially looked at any person or object. He was a man of literary taste and acquirements, and he associated with persons of that character and reputation. Amongst others, he was very intimate with Mrs. Skimmelpennick, who then lived in a house a few hundred yards from the Infirmary. He had also, I think, some intimacy and connection with a congregation of Moravians, who had a chapel near the Infirmary.

His medical opinions and practice were peculiar for that day. He appeared to act on the belief that nearly all deviations from health arose from want of vital power

or deficiency of food. He carried this out in his own personal habits, generally carrying in his pockets some of Abernethy's biscuits, or other light food, which he often munched as he was going round the wards, or in the out-patient room. Of course he carried out this system in the treatment of his patients. His prescriptions were nearly all composed of tonics or stimulants, to which was added a full nutritious diet. He used, very sparingly, the almost universal depleting treatment of the day: bleeding, purgatives, nauseating mixtures, &c., even in the cases of acute inflammation.

I have, however, a very vivid recollection of one unfortunate prescription of his, the effect of which left a strong prejudice on my mind against the medicine he then prescribed, when it was re-introduced many years after, and soon became in general use. Dr. Stock had two male patients in one ward suffering from chronic rheumatism. In the treatment of these cases the ordinary remedies had failed to give relief. One day the following prescription, in Dr. Stock's book, for both these patients, was brought to the dispensary: ℞ Ol. Jecoris Aselli, coch. mag. iij. ter di. None of us pupils could make it out: we had never heard of such a drug; but the dispenser (Cross), after some searching, brought out from the store-room an old-fashioned black quart bottle, covered with dust and cobwebs, three-parts full of a dark-coloured oil, with a strong, fishy, and somewhat rancid smell. The faded label on the bottle corresponded with the medicine prescribed. No one knew how long the bottle had been in store. There was no record of its having been used within living memory. However, two eight-ounce bottles were filled with this oil, labelled according to the prescription, and sent to the ward, and some of the

contents taken by the patients as directed. I do not remember how many doses were taken, or whether they were retained on the stomach; but on the following day both the patients were attacked with acute gastritis. One of them died a day or two after; the other recovered. The autopsy of the fatal case showed an intensely inflamed state of the whole mucous membrane of the stomach, with dark-red, almost black, patches of the size of a sixpence scattered over the surface of it, having almost the appearance of extravasation of blood. I write chiefly from memory, and I do not remember the after-history of the patient who recovered from the gastritis, nor whether his rheumatism was relieved or removed. Dr. Stock lived at Clifton; I think his private and consulting practice was not large. He attended the Infirmary pretty regularly, and always drove there in a carriage and pair. He was sociable and friendly with the pupils, and rather liked by them, but often laughed at and quizzed for his peculiarities.

The next physician in seniority, Dr. Henry Hawes Fox, was quite different in appearance, manners, and practice from the two former. He was pre-eminently a courtier, with soft, slow, and gentle speech, and kind and insinuating look and manner. A rather stout, handsome, middle-aged man, always well dressed. His walk was quiet and deliberate, and apparently slow. But, with all that, he lost no time in getting through his work and over the ground he had to go. The treatment of his patients at the Infirmary was almost entirely expectant; he ordered scarcely any medicines but mild sedatives and placebos. Dr. Fox's chief aim in seeing his in- and out-patients at the Infirmary was, apparently, to get through the work as quickly as he could, and yet in the most

courteous and deliberate manner. He would see and prescribe for twenty to forty or fifty out-patients in twenty or twenty-five minutes, and would go round the wards in the same time and manner.

Seated by the table in the out-patient room, with the resident medical officer or his senior pupil by his side to write his prescriptions, this would be the general mode of procedure. As they came into the room, one at a time, and stood (rarely sat) by his side, Dr. Fox would look kindly and say, "How—do—you—do, my friend?" Some answer would come from the patient; but the doctor would immediately turn to his attendant scribe, and say, "Continue," or "Repeat, sir"; and then to the boy at the door, "Next, if you please." So rapid was he in getting through his list of patients in this manner, that it was difficult to keep up with him in writing, although there were rarely any fresh prescriptions, except for new patients. Dr. Fox's mode with his in-patients was much the same. He walked through the ward, and from bed to bed, with slow, deliberate, gentle steps, scarcely ever stopping at a bed more than a few seconds, but always addressing each patient with a slow and courteous enquiry as to his or her health, and often saying, "Good-day to you," or "Good-morning," as he passed on to the next bed. Dr. Fox was always very courteous to the resident medical officer and to the pupils. Indeed, from his manner and conduct at the Infirmary, one would infer that he could never be angry or say an unkind word; that he would never be in a hurry, and yet would get through his work in less time than any one else could. Dr. Fox had a large and fashionable practice, both private and consulting. He drove a handsome carriage, well appointed in every respect; he was very particular about his horses,

which were usually grey. There was a story, however, that he or his coachman had once bought a new high-priced horse which, when brought to Dr. Fox's, appeared familiar with the stable, and, after a careful examination, was found to be the same old horse which had been sold a short time before as being worn-out, but which had been so doctored and transformed by the dealer as to deceive the knowing ones. I will not answer for the truth of this story; I know it only from hearsay.

Dr. J. C. Prichard, although the junior physician at the Infirmary in my time, was far in advance of the others in culture, in general and professional knowledge, and in literary reputation, which was not limited to Bristol or to England, but was European. He was a small, spare man, with a short, quick, decided step; sharp and somewhat curt in his speech, but kind and very attentive to his hospital patients. He generally wore a large, loose overcoat, with roomy side-pockets, large enough to hold a quarto or small folio case-book; and he generally carried other books with him on the seat of his carriage. He took notes of the cases of his patients in the Infirmary, in short, terse Latin sentences, in his case-book, which he always carried himself, and brought to the Infirmary and took away with him. He was a great linguist, and would talk to his patients, when necessary, in their own language, French, German, and especially Welsh, from which country we had many in the Infirmary, some of whom could hardly understand English. (I have heard that Dr. Prichard considered the Welsh the most musical and melodious of languages.) It was said that he had talked Hebrew with a Jew. I certainly did not hear this. The other languages mentioned I have myself heard.

Dr. Prichard's treatment of the cases under his care was, even then, considered heroic. He did not bleed so much as Dr. Carrick; but counter-irritation in every form he pushed to an extreme degree. Blisters, often very large ones, setons, issues made by caustics or the knife, and the suppuration kept up by peas or medicated beads. One issue was called by his name. An incision through the scalp from the vertex to the forehead, three or four inches in length, kept open, first by dry lint, and after suppuration was established, by peas, in cases of cerebral disease or mischief. I have certainly seen undoubted benefit from this mode of treatment in some severe cases.

Dr. Prichard's heroic treatment extended to the use of drugs. Mercury, digitalis (generally given in the form of infusion and in large doses), colchicum, and other potent drugs were often pushed to the extreme limit of safety in the treatment of acute diseases. I may give an account of his treatment of myself, as a fair example of his usual mode of practice. Shortly before the end of my apprenticeship, in my twenty-first year, I had an attack of continued fever of some form, not very severe, principally affecting the head, but without delirium. Dr. Prichard attended me with Mr. Morgan, the then resident surgeon. He directed me to be bled to twenty ounces one forenoon; the same evening he ordered twenty leeches to be applied to my temples; and the following morning ten grains of calomel to be taken in one dose. This last acted as an emetic, and I brought it up. Mercurials had always a specially depressing effect upon me, and I was anything but a strong or robust man at the time. However, I recovered well, and without any continued drawbacks, except some prolonged weakness.

Dr. Prichard was in great general esteem as a man of wide knowledge and high literary accomplishments. He had a large consulting practice; not, I believe, an extensive private one. He drove a carriage and pair, like all the other physicians. He appeared to be always reading in his carriage, and had generally a heap of books with him. His wife was a Miss Estlin, one of a highly cultivated and much esteemed Bristol family, and connected with the Stuckeys and Bagehots of Langport.

The results of the different modes of practice in the treatment of diseases of these four physicians was well worth the careful observation of the pupils. It certainly was a profitable part of my medical education and experience, and has been a useful guide to me in my medical practice in after life.

I do not remember that the results differed much in acute diseases. Cases of fever, mostly gastric or typhoid, although they were not so called then, were freely admitted into the medical wards without any separation from the other patients. Many of them died, but I do not think the proportion of the fatal cases was greater under the treatment of Drs. Carrick and Prichard than under Drs. Stock and Fox. The same may be said of acute inflammations, pleurisy, pneumonia, peritonitis, acute rheumatism, meningitis, &c. Many of these were admitted into the Infirmary, and a certain proportion of them were fatal. Nearly all of them were bled in the early stage by the orders of their physician, or the resident medical officer. My impression is that their recovery, or death, or serious secondary consequences, depended more upon the previous health and strength of constitution of the patient than on the mode of treatment.

But in chronic cases, and especially in such as were

necessarily fatal, the different effects of the treatment were so marked that the least observant pupil could hardly avoid noticing them. This was specially well marked in cases of phthisis. Many of these were admitted into the Infirmary, and a large proportion remained there till the fatal termination. Of these Dr. Fox's patients especially, who had no medical treatment but mild opiates and placebos, with warm comfortable quarters and a suitable diet, lingered on from week to week and month to month, as if they set death at defiance. But those who were subjected to active treatment of any kind, whether by drugs or counter-irritants, or any experimental management, soon gave us an opportunity of studying the morbid effects of the disease in the dead-house. The same may be said in a less degree of other chronic diseases, as cancer, paralysis, and others not often or necessarily fatal; chronic rheumatism, chronic visceral diseases, &c. The more they were left to the effects of comfort and repose and a suitable diet, and the less they were drugged and victimised by caustic or knife, the longer they lived, or the sooner they recovered or were relieved.

I had not much to do with the surgeons during my apprenticeship, as the house-pupils were not allowed to see much of their practice, except in the case of operations and severe casualties, and when acting as *locum tenens* for the pupil in charge, which was a frequent privilege—but this was *sub rosâ*. We could only judge of their general treatment of their cases by their prescriptions and the gossip of their pupils.

All the five surgeons were, however, sufficiently distinct in character and appearance, and in their mode of operating.

The senior surgeon was Mr. Richard Smith. He had

been surgeon to the Infirmary for many years before I went there, and continued as acting-surgeon until his sudden death, many years after I left. I was a pupil and dresser under him for a year after the end of my apprenticeship, and before finishing my education in London. He was a well-known personage in Bristol outside his profession. He was a big, burly man, with a round, florid face, large whiskers, a hearty, jovial manner, and rather loud, brusque voice. He was a boon companion in society, and a welcome guest at public and private dinners. He could tell a good story or anecdote, and, I believe, sing a comic song. His tales were often professional; and neither those nor some of his jokes or songs were quite suitable for the ears of ladies or clergymen, or non-professional precise men. But in those days a good deal of coarseness in language was not only tolerated, but looked for and enjoyed at public gatherings. I believe "Dick Smith," as he was generally called, was a very popular man in Bristol, both within and without the profession. He was a good surgeon for those days; rather careless in the treatment of his patients, whether in the wards or in the operating theatre. He was a bold, steady operator, but rather rough and reckless; and not very mindful of the feelings or state of his patient. He was very popular with the pupils and his colleagues, and, I think, rather a favourite with the Infirmary patients.

He had a good general private practice, and also an operating and consulting practice. He was in the habit of seeing patients at his own house of a morning, mostly young men, and dispensing for them in a very rough way from his own surgery. One of his pupils attended there for an hour or two every morning, to show the patients who came into Mr. Smith's consulting-room (they gener-

ally came by a back-door opening into Park Row—Mr. Richard Smith lived in Park Street), and to dispense the medicines prescribed, usually verbally, and mostly limited to powders, pills, or ointment, put up in a very rough and ready style. I attended for this purpose during some part of my pupilage with him.

Mr. Richard Smith had formed a museum of specimens of morbid structures and formations, and some of general anatomy. This museum was specially rich in specimens of calculi, most of which had been removed by lithotomy at the Infirmary. These were all put up most carefully by himself, making sections of them, and fixing them in shallow trays of white cardboard, with circles of ink drawn round each with a pair of compasses, and a short description and history added. I think there must have been nearly a hundred of these calculi. He employed his spare time whilst waiting for his morning patients in putting them up and arranging them. There was one rather gaunt and weird object in this museum. It was a large case with a glass door in front. In this case was hung the skeleton of a young man, who had been hanged for murder, and his body given to the surgeons of the Infirmary for dissection. In a fit of jealousy he had flung a stone at a young woman whom he was courting. The stone struck her on the back of the head, and, I suppose, fractured her skull. She was taken to the Infirmary under Mr. Smith's care, and, I believe, trephined, and in a few days died. The skeleton was well preserved and articulated, and hung up in this case; and by its side were hung the cords by which he had been hung and his hands tied, and also a book containing all the briefs and other manuscripts connected with his trial, and a full account of the crime. This book had been bound with

the tanned skin of the murderer. On the outside of the cover was a label with a printed inscription, "Cutis vera Johannis" (I forget his other name). All this occurred before I went to the Infirmary. A large room on the ground-floor of the Infirmary was given up to this museum whilst I was there, and Mr. R. Smith spent many hours of the forenoon in this room. The museum was generally open to the faculty and pupils of the Infirmary, and, I think, to the profession generally. And visitors, female as well as male, were often admitted to see it.

Mr. Richard Smith drove a high gig with a large old horse, and an old coachman as big and burly as his master. In wet or cold weather the coachman was well cased in a bulky box great-coat, with voluminous capes.

Mr. Richard Smith was a married man, but he had no children. His wife was well known and highly esteemed in Bristol as a very benevolent lady, and an active, earnest member of the Evangelical Church party, with whom she was reported to have kept up a good deal of visiting at her own house. But it was understood that her husband was never, or very rarely, present at these parties. I believe they lived very amicably in the same house, but had each their different friends and pursuits. I have an idea that Mrs. R. Smith had a private carriage for herself.

Mr. Richard Smith was really a very kind and considerate man, especially to his pupils. He would occasionally keep them in roars of laughter with some of his professional stories and anecdotes, which he told and embellished in a very graphic and humorous manner.

Mr. Hetling was the surgeon next in seniority. He was, I think, older than Mr. Richard Smith, and was very

different from him in person, appearance, and general and professional character. He was a slight, thin man, not very free or communicative with his pupils; regular in his visits to the Infirmary, and he took a good deal of pains with his patients there, as to their general treatment, prescribing more medicine for them than some of the other surgeons.

He was a very slow and rather clumsy operator. In cases of strangulated hernia he would slowly divide every possible layer or subdivision of cellular tissue or fascia on a director, sometimes to the number of seven or eight or more, before exposing the sac; and in opening this he used every possible precaution. But we observed that his cases of this class more frequently recovered, and more speedily, than those of some of the other surgeons, who were more bold and quick operators. Mr. Hetling always appeared clumsy and awkward in the use of the knife to the spectators; but there was no apparent nervousness or want of self-confidence.

Mr. Hetling lived in a house in the Royal York Crescent, Clifton. He had, I think, a good private practice. He drove a close carriage and pair in his professional visits; but he sometimes walked to the Infirmary. He was a married man, with a large family of sons and daughters, and I think they visited a good deal. I was once at a dance at their house. One of his sons, who was fully qualified as a surgeon, died during my pupilage. His youngest son (George) was a pupil to his father at the Infirmary in my time. He was two or three years younger than myself. Some years later he left the medical profession and became a High Church clergyman. He married a Taunton lady, and I met him here occasionally in later years. I met him in the streets of

Taunton two or three years ago, and had a chat with him about old Infirmary legends.

Mr. Lowe comes next in seniority. His father had been surgeon to the Infirmary before him. Mr. Lowe had a very strong and well-marked individuality of character. He was rather a tall and spare but muscular man, with a clean-shaved face, good looking, but with a determined and somewhat cynical expression. He was always well dressed, but in what would be considered now, or even then, an old-fashioned style. He often wore breeches and top-boots, the latter beautifully made and well polished, with very light-coloured and well-made tops. In this dress he walked to see his patients and visited the Infirmary. He kept no horse or carriage, and, I believe, never rode in Bristol or Clifton: he always walked to the Infirmary. He had very well-formed and tapering hands and feet, and was supposed to be rather proud of them, hence his style of dress. He was a great friend and ally of Mr. Richard Smith, although so different in appearance and character. He was very cynical and severe in his remarks and opinion on people in general, and often came to the Infirmary charged with the last piece of gossip or scandal, which he retailed to his friend Smith in his peculiar dry, sneering tone. At the time the *Lancet* was first started, it had, nearly every week, some bit of scandal or criticism against one or more of the leading London hospital surgeons. Lowe would come to the Infirmary primed with this, and read it aloud to Richard Smith or any of his other colleagues with great gusto.

Mr. Lowe was a *very good operator*. It was quite a treat to watch the manner in which he used the knife—with great dexterity and neatness, and with perfect pre-

cision and anatomical skill, and yet with great boldness. I have seen him, in operating for strangulated hernia, put the skin on the stretch with the thumb and forefinger of his left hand, and then, with the scalpel in his right, divide it and the layer of cellular tissue and fascia rapidly, without using forceps or director, then opening the sac by pinching up a little fold of it with the forceps. He was very fond of operating, and laid himself out for it. He would not, if he could avoid it, admit any surgical chronic cases under his care, which could be cured or removed by an operation, without getting the consent of the patient previously to this mode of treatment. This was specially the case with old or extensive ulcers of the leg.

Mr. Lowe was a very determined, as well as bold, operator. I will relate a case in illustration of this. A young man was admitted under him, with reported calculus in the bladder, for lithotomy. He was examined with a sound. A consultation was held on his case, and, although there was some obscurity in the results of the sounding, all the surgeons agreed that there was a calculus, and that it was a proper case for lithotomy. Mr. Lowe operated, and opened the bladder in his usual prompt and skilful manner; but when the forceps were introduced, no stone could be found. Mr. Lowe was not to be baffled; he was confident that his diagnosis was right, and he proceeded to explore, and wash out the bladder, by every means he could devise, for a long time, but in vain. The patient was at last released and taken back to his bed, much exhausted. He died the next morning. His father was very angry and outrageous, and refused to allow an examination of the body, which he removed from the Infirmary the same day. It was reported that some surgeon, not connected with the

Infirmary, had made an examination of the body, and found a thickening and cartilaginous change of structure of some part of the coats of the bladder, which had led to the error in diagnosis.

Mr. Lowe did little in the way of the medical treatment of his patients. He was a strict disciplinarian with his pupils, required them to dress all wounds, sores, burns, &c., themselves, and to leave nothing to the nurses. He punished them pretty severely with his rough, sarcastic tongue, if he found them shirking their work. He was also very ready to put down anything like conceit or presumption in any of the pupils, whether his own or others, by some short, sharp, cutting remark. But he was admired, and, in a certain sense, liked by the pupils generally for his skill, and almost dramatic perfection, in the use of the operating knife.

Mr. Lowe had a small, but select and good, private practice, and, I think, some consulting operations. He was a married man with a family; but was reported to be somewhat cynical and reserved in his domestic relations, and to take his breakfast always alone in his consulting-room. He was said to be specially fond of strong green tea, which he kept for his special use. He lived to an advanced age, and, I think, continued acting as senior surgeon to the Infirmary long after the death of his friend, Richard Smith. Mr. Lowe presided at a dinner of old Infirmary men at the Montague Tavern, Kingsdown, some years after I was in practice at Taunton. I had engaged to attend it, but was prevented doing so at the last by some professional engagement.

Mr. Daniel was the next surgeon. He also had his peculiarities and individuality of character. He was a stout, good-looking, well-dressed man; rather loud and

positive in expressing his opinions and laying down the law. He was active in his medical as well as surgical treatment, prescribed freely active and powerful medicines for his Infirmary patients, and he went in strongly for the heroic treatment of that time. He was a rough and clumsy operator, and had not a clever use of his hands in surgical manipulations; but he had plenty of boldness and confidence in the use of the knife. He was inclined to be rough with his pupils, and almost bullied the younger ones sometimes if they neglected the patients; but he was considerate and friendly in his general manner and bearing to them. He was kind in taking notice of me, when I went first to the Infirmary, and gave me a hint or two, in his rough way, which were of much use to me in after life. I was not always correct in my spelling at that time. Some of my writing must have come under his notice in which I had made mistakes of this kind. He took an early opportunity of giving me some advice on the subject, somewhat in this way, you know: "Alford, a man may write illegibly without losing caste; but no gentleman spells badly." I date to that kind reproof my efforts to be more careful and correct in this matter.

Mr. Daniel had a very good general private practice—I think, at that time, the largest and most lucrative in Bristol. He drove a handsome carriage with a fine pair of horses, altogether a stylish turn-out. He had one daughter, I think his sole family. She afterwards married Dr. Riley.

Mr. Nathaniel Smith (commonly called "Nat Smith") was the junior surgeon. He was a short, bright, natty little man; very pleasant in manners and conversation; not very punctual or regular in his visits to the Infirmary, leaving a good deal to his pupils and to the resident

medical officer. He was a *very good* operator, probably as good as Mr. Lowe, but somewhat different in his style of operating. He was specially neat and clean and precise in the use of the knife, without the dash and boldness of Mr. Lowe; but, perhaps, the safer operator. He never lost his perfect steadiness and presence of mind. I remember seeing him operate in a case of strangulated hernia, in which there was some difficulty and complication. There was some delay, and a doubt whether the intestine had not been wounded. Although he became pale, and beads of perspiration stood on his brow—I suppose from anxiety, and the length of the operation—yet his hand was perfectly steady and firm, and his manner and voice betrayed no anxiety or want of self-confidence.

Mr. Nathaniel Smith drove a smart carriage and pair, and generally came to the Infirmary in it. He had a good private practice, and frequent consultations and private operations, I believe. He had a wife and large family. He was the only one of the surgeons of the Infirmary at that time who took pupils in his own house. They were supposed to be under very little restraint or control, and some of them were not noted for steadiness or hard work.

Mr. Nathaniel Smith was the oldest survivor of the surgeons of my time. He lived at Weston-super-Mare after he had left the Infirmary, and given up private practice, except consultations and operations. He has seen patients of mine at Weston in consultation with me. I have heard of his operating at Weston when he must have been eighty years of age, or nearly as much, without failure of sight or unsteadiness of hand. He died at Weston some years ago at an advanced age, much beyond eighty.

Before concluding these reminiscences, I will record two or three incidents peculiar to that time which stand out clear in my memory. From the general adoption of heroic practice in the treatment of disease there was a great deal of bleeding, not only from the arm, but also by cupping, opening the temporal artery or jugular vein, and by leeches. All these minor operations were performed by the pupils. The number of bleedings on Dr. Carrick's out-patient days was very large. These were performed in a room on the ground-floor set apart for the purpose, and called the bleeding-room. The floor was covered with red floorcloth. There was a long movable deal bench, without any back to it, generally placed across the room, facing the windows. On this the patients sat to be bled. On the days when the bleedings were numerous, the pupil for the week would often arrange five or six of these patients in a row, side by side; first fix a bandage round the arm of each, and give them a pewter bleeding-dish to hold in the other hand; then, beginning at one end, open the vein of each in succession, and, when finished with the last, go back to the first, ready to remove the bandage and tie up the arm. It sometimes happened that one of the patients fainted and fell off the bench, and the blood was spilt over the room and the dress of the patient. I do not remember that any other evil often followed this rough mode of venesection. Tooth-drawing was also performed in this room, by the pupil for the week or his substitute, for all applicants. This was often done in a very rough way. The old key was the instrument nearly always used in the extraction of molars, very often applied with more force than skill.

The pupils generally looked upon the bleeding as a

drudgery, and complained of the expense of having their lancets ground or set. I have seen one or two of them strop their lancets on the sole of their boots. The pupil for the week was very glad to get a substitute when he could, and in this way I had a large practice in bleeding whilst I was a house-pupil. I think I must often have bled twenty or more in a day. I began bleeding when I had been at the Infirmary not more than six weeks or two months, although I was very timid about it at first. I had also opportunities of performing many of the minor operations of surgery, and even reducing dislocations of the shoulder, elbow, or fingers, without any assistant but the nurse, when I was in the temporary charge of casualties as *locum tenens* for the pupil in charge. In fact, I learned much more of practical surgery and anatomy, and had more dissection, at the Infirmary than at the London School and Hospital I afterwards attended. I should here record one fact connected with getting subjects for dissection. In addition to the opportunities for dissection in the dead-room, in making *post mortem* examinations, and the surreptitious getting of subjects for Dr. Wallis's lectures from the Infirmary, the practice of resurrectionists had been carried on by some of the Infirmary pupils before my time. Two such expeditions were undertaken whilst I was there; but I did not join in either of them. In the first of these one of the house-pupils, who slept in the same room with me (not Mr. Butter), and several others formed a plan to get the body of a pauper, who had been buried in a village churchyard in Somersetshire, five or six miles from Bristol. They hired a horse and gig from a livery stableman, who, I fancy, guessed their purpose and gave information. However, they carried out their plan, took

up the body, and brought it to Bristol in a sack in the gig. Unfortunately they broke one of the shafts, and most of them were obliged to walk home. When they came to the Stone Bridge they found a *posse* of watchmen waiting for them, who took them and their cargo into custody, all but my bedroom companion, who was walking behind the rest and escaped. He startled me by coming in through the window of the bedroom in the early morning, covered with dirt, very tired and disgusted with the results of the expedition. Those who were taken were brought before the magistrates during the day, when they were sharply reprimanded, and made to pay the cost of the body being taken back to the village and reburied. But this was the only penalty inflicted on them.

The other resurrectionist attempt I remember was also unsuccessful, and rather ludicrous in its results. Two separate parties of the pupils had formed a plan for taking up the body of a man which had been buried in the Infirmary private cemetery. They met at night at the burying-ground, but could not agree to act together. Some altercation arose, which gave an alarm and put an end to the attempt to get the body; but not to the hostile feelings of the two parties, which had to be appeased by some sort of pugilistic encounter some days after.

I think there were no further attempts at this mode of getting subjects for dissection.

Clinical Records.

CLINICAL STUDIES OF DISEASE IN CHILDREN.

By ELIZA L. WALKER DUNBAR, M.D. *Zürich*, L.K.Q.C.P.I.

PARTIAL BRONZE SKIN ASSOCIATED WITH INVOLUNTARY MUSCULAR ACTION AFTER A FALL ON THE LEFT SIDE.

Ada P., eight years old, was brought to me by her mother, in the summer of 1889, for medical advice concerning an affection described as "going down." The child during the past twelve months had been subject to being compelled to bend down sideways, sometimes to the left, sometimes to the right, less frequently backwards and also forwards. The movements occurred once, twice, three times, and never more than seven times in the day, at intervals of a few days, and once the interval had been as long as fourteen days. The movements appeared, on close questioning, to be those that would be effected sideways by action of the quadratus lumborum muscle of both sides; backwards by the two longissimi dorsi muscles, and forwards by the recti abdominales muscles. As it was distinctly stated that the head was stretched back and bent forwards with the backwards and forward movements, and sometimes even separately, the muscles which continue for the head the separate movements of the vertebral column were also implicated in the involuntary contractions. The movements were not sudden jerks, but gradual, the body swaying down by degrees and keeping bent for a little time, then

relaxing and allowing of reposition after a very few minutes. The child seems always to have been assisted to the upright position after the attack. Once it was over she seemed to be about as well as usual and would resume her play or lessons. Mention must be made of the fact that the child had stated to her mother, for the first and only time, a week previously that she sometimes saw things double one above another. But this symptom never recurred after I saw her.

The skin of the dorsal surfaces of both hands was very brown, of a deeper brown than exposure to sun in an English city usually produces: but on my assuming that the hands were sunburnt, the mother immediately stated their colour had been the same during the past winter; neighbours had remarked how strangely brown the child was. The discolouration extended nearly half-way up the forearms on their dorsal surface, and ended with a line as if a sleeve had usually there encircled pretty closely the arm; but the child had not worn any such sleeve. There was also a patch of brown colouring on the right side of the neck below the ear. The whole face was brownish, but much lighter than arm and neck; the skin over the arm and under the right eye was rather scaly. The child did not feel ill, had a good appetite, and slept well. Urine contained no albumen and appeared to be normal.

The history of the case was thus given by the mother: In July, 1888, the child, while taking part in a school-treat, had fallen down sideways to the left over a stone. When picked up she continued bent to the left side and could not draw herself up straight. Carried to the accident ward of a local institution, she was literally put straight by the attendant surgeon and bandaged. There was no bruise to be seen either then or eight days after-

wards, when the bandage was removed and the child dismissed as well. Two months afterwards, at the end of September, the involuntary muscular contractions began. The child was seen to bend down to the left side; the movement was repeated after a short time, and recurred again after a few days' interval. The brown colour (of neck, arms, hands, and face) was first noticed as being peculiar when it could no longer be ascribed to sunburn.

The previous history of the child showed that she had suffered from the age of 18 months to 3½ years from œdema, due probably to some kidney-disorder. She recovered on removal to the seaside, and became strong and well. Returning to Clifton after a year and a half, she seemed to flag, but was always well enough to attend school.

Medical treatment did not appear to influence the affection in any way during the few weeks I prescribed for it. I lost sight of the case till the end of December, when her mother, reappearing for medical advice for an infant, made the surprising statement that Ada was quite well, having lost for over six weeks the habit of "going down;" and some time after the last "going down" the hands, neck, and face had recovered the tint natural to the rest of the skin.

This I verified on seeing the child. She had in the meantime been without medical treatment.

The case I believe to be one of mechanical injury by a fall on the left side: (1) to the left supra-renal body, giving rise to a slight attack of Addison's disease; and (2) to the 12th left dorsal and the 1st left lumbar nerves, which supply the principal muscles involved in the contractions. The connection of these nerves within the

grey substance of the spinal cord accounts for the irritation acting on the nerves of the corresponding muscles of the right side, as well as for implication of the nerves of the muscles moving the head, which moreover often moves co-ordinately with the whole movement of the spinal column. Nerve-connections within the spinal cord may also be invoked to account for the action of the muscles of the eye producing temporary double sight.

ENLARGEMENT OF LIVER, PROBABLY FROM DEPOSIT OF FAT.

A little girl three years old showed such an increasing enlargement of the abdomen as to lead to medical advice being sought. The enlargement on examination I found to be entirely due to increase of size of the liver, which reached in its lowest boundary to a line drawn across the navel. Traces of rickets were present, but in a slight degree, and there was no deformity of the thorax such as would be followed by displacement of the liver. The little girl had during the short period of her existence shown always an extraordinarily large appetite, to appease which she had frequently been found eating paper in large quantities—newspaper and also cardboard. According to the mother's statement, the child ate habitually largely, was unrestricted as to quantity at meal-times, and required as much as her brother who was 14 years old. Often the child procured food between meals. Latterly many dainties refused by an invalid in the house had been eaten up by the child. She was well, except for a little diarrhœa, which soon ceased when appropriate remedies were used. Also she had been seen to pant

a little after running upstairs, a symptom which soon disappeared after treatment had begun.

Every organ was sound with the exception of the liver. Though it was enlarged, it was quite painless however pressed. Temperature was normal and urine contained no albumen.

Considering the history of the case, the enormous appetite and recent means of extra indulgence, the painlessness, and the healthy state of heart, lungs, and kidneys, I diagnosed accumulation of fat in the liver. The treatment consisted chiefly in restricting the diet, and after six months' time the liver was found to be of normal proportions.

A CASE OF CONGENITAL HEART-DISEASE.

By LOCKHART STEPHENS, M.R.C.S., L.S.A., Emsworth.

As it is desirable to have a permanent record of any considerable deviation from normal anatomical formation, the following notes will be of interest.

M. L., æt. 2 years and 4 months, was admitted on May 26th, 1885, to the Bristol General Hospital under the care of Mr. Pickering, to whom I am indebted for permission to publish the case, for severe burn of buttocks and lower part of back, which, although treated in the usual manner, showed little tendency to heal. The child was extremely livid,* even to the finger-tips, which were markedly clubbed. It was a poor, ill-nourished child; at times bright and cheerful, at others troubled a good deal with shortness of breath. The only condition to

* The lividity increased considerably during stay in Hospital.

be made out during life was that the apex-beat was in the usual situation; there was a systolic thrill and bruit. Much importance, however, cannot be attached to this observation; for the child was too ill to admit of thorough examination. The blueness had existed since birth, according to the mother's account.

June 15th.—Had a convulsive attack and nearly died.

June 16th.—More blue than usual. Died suddenly, after convulsion.

Examination twenty-four hours after death.

Body thin and ill-nourished. A large granulating surface, 4 × 3 in., over sacrum and upper part of buttocks. No signs of decomposition. Day warm and dry. Rigor mortis slight. No hypostasis.

Nothing unusual about external appearance of body beyond the extreme clubbing of the nails.

HEAD.—Not examined.

NECK.—No enlarged glands. Nothing abnormal about thymus, thyroid, ribs, or costal cartilages.

LUNGS AND PLEURÆ.—Healthy. Were removed entire, with heart and liver, in order to see the arrangement of the great vessels.

HEART.—Not weighed, but larger than normal. On opening pericardium ʒij. or ʒiij. of clear yellow serum found in sac. Heart very firm and rounded; this condition being almost entirely due to the right ventricle, which was firm and tense, and formed the apex of the organ. The aorta was found to arise from the right ventricle and the pulmonary artery from the left ventricle.

To summarise the arrangement existing between the cavities of the heart and the great vessels, it was as follows:

I. *Right Auricle.*—Very large and filled with clot.

Opening into it from below was the vena cava inferior, the size of one's forefinger; from above the vena cava superior, the size of a quill-pen or rather larger.

Between the right and left auricles is the foramen ovale, showing a firm crescentic margin for three-fourths of its circumference, whilst the posterior, or rather postero-inferior, quarter blended with the muscular wall of the auricle, towards the orifice of entrance of the inferior cava. The valve is fenestrated in five small holes around the quarter of its circumference nearest the inferior cava and just in front of the orifice of entrance of the right pulmonary vein to the left auricle.

A probe passes directly from right to left auricles, from inferior cava to left auricle, and from right auricle through the valve to the right pulmonary vein. The coronary sinus also opens into right auricle.

II. *Right Ventricle.*—Very thick, half inch at thickest part near apex, and strong. The aorta comes off from it in front of the pulmonary artery, which comes from the left ventricle. The aortic and auriculo-ventricular valves are healthy.

III. *Left Ventricle.*—Thin, one-tenth inch thick. From it the pulmonary artery arises and into it the left auricle opens. The valves of both orifices are healthy.

IV. *Left Auricle.*—Very minute; just a little puckered piece of heart-muscle and no more.

Where the right and left pulmonary veins meet, the anterior wall of the vessel is made up of the fenestrated foramen ovale. There is practically no left auricle.

The ductus arteriosus is closed.

Reviews of Books.

Clinical Diagnosis: the Bacteriological, Chemical, and Microscopical Evidence of Disease. By Dr. RUDOLF V. JAKSCH. London: CHARLES GRIFFIN & COMPANY. 1890.

THIS is a translation by Dr. James Cagney from the second edition of a book which has obtained a wide reputation in Germany. It supplies a distinct want in English medical literature, and the practical convenience of such a work is so obvious that we can only wonder that we have hitherto been without anything of the same kind. The object of the book is to give in moderate compass an account of the methods to be followed in the clinical investigation of disease, apart from the actual examination of the patient. Its scope is thus limited to a description of the most approved chemical tests, methods of preparation for microscopic examination and for the detection of micro-organisms, of the naked-eye appearances of the blood and excretions, and of the bodies, normal and abnormal, contained in them. The author indicates the diseases in which the particular morbid changes under discussion are generally found, but wisely abstains from taking away from the practical character of the book by any description of clinical symptoms. Thus we have a handbook to those further methods of clinical examination other than are comprehended under the term physical diagnosis.

The examination of the blood is first considered, then in order that of the nasal and buccal secretions, the sputum, gastric juice, fæces, urine, etc.; and under these heads we have collected in one volume a vast body of information only to be obtained previously by a laborious search through many text-books. The book thus forms a useful work of reference, and in it are embodied the results of much original research, as well as a record of the observations of others. There is an excellent section on bacteriology, in which is given an account of the apparatus necessary and the methods to be followed in

the staining and cultivation of micro-organisms, with a short scheme of the plan to be adopted for the recognition of micro-organisms in any fluid from the body. The translator has compiled from the references in the text a bibliography extending over 30 pages, referring for the most part to German authors. Professor Stirling provides an appendix containing matter likely to be useful to English readers; and there is, what is absolutely essential in a book of this kind, a good index.

We think that a useful addition to the end of each section would be a table of the order in which the chief tests, chemical and microscopical, should be employed in the routine examination of the excretion treated of in that section. It would have been more convenient also to have placed under the figures the amount of magnification; in the present arrangement, one has constantly to turn back and hunt up the figure in the list of illustrations at the beginning of the book where the numbers of the ocular and objective used are given. The illustrations are numerous and good; we should single out for special praise the collective views of the microscopic objects commonly found in the vomit and fæces, and the pictures of the urinary crystals. Drawings of the heads of the tænias of the natural size should, we think, have been given, and the pictures of the microscope and of Abbe's condenser in the appendix are now hardly necessary.

On matters of detail we notice that the author considers that further evidence is necessary before the bacillus of tetanus can be considered to be the cause of this disease, and that the discovery of the diplococcus pneumoniæ in the sputum is of little value in diagnosis. Preference is given to the Weigert-Ehrlich and Ziehl-Neelsen fluids for staining tubercle-bacilli; Gibbes' stain, given in the appendix, has proved in our hands unreliable, and it quickly spoils. The author selects as the best test for free hydrochloric acid in the gastric juice benzo-purpurin, and next congo-red and aniline-violet: the general opinion is, we believe, that the two latter are uncertain. The section on the fæces is one of the best in the book, and will be found most useful; there is a good description of the micro-organisms found, and a full account of the methods necessary for the complete detection of the cholera-bacillus; the author calls attention to the frequent presence of hæmatoidin crystals in the fæces. Under the head of the Urine, the tests for albumen recommended are: (1) the nitric acid and heat test, (2) acetic acid and ferrocyanide of potassium, (3) the biuret test, (4) nitric acid in the cold; and it is pointed out that, by applying them in order, it is "possible to form some judgment

as to the character of the proteids under investigation." The precautions to be taken in order to ensure a fairly accurate result with Esbach's quantitative test are detailed; two pages are devoted to the description of Brandberg's modification of Roberts' test for approximate estimation of the amount of albumen—we think unnecessarily. For sugar the author prefers the phenyl-hydrazin test (qualitative); the method given for using Fehling's solution in quantitative testing seems to us to be more troublesome than the ordinary one, without corresponding advantages. Hüfner's apparatus for the estimation of urea by the hypobromite process is not so convenient as others now in use; and a table of the daily excretion of urea according to the different body-weights might have been added with advantage. There are excellent sections on the urine in cases of poisoning, on the detection of certain drugs in the urine, and on the presence of ptomaines in it, and a working classification of the latter bodies is given. The description of the naked-eye appearances of the urine in different states we do not consider so satisfactory.

Dr. Cagney has added some new matter to this English edition; *inter alia*, an account of Haycraft and Williamson's method of determining quantitatively the alkalinity of the blood, of Fenwick's work on the sulphocyanide of the saliva, and a description of Gowers' hæmacytometer. We cannot conclude without a word of praise for the very excellent manner in which the translation has been accomplished. The book is printed in clear type and neatly bound.

Treatment of Disease in Children. By ANGEL MONEY, M.D. Second Edition. London: H. K. LEWIS. 1890.

Containing more than is implied in its main title, this book is a very useful one. Fair space is given to the outlines of diagnosis, which must be accurate if treatment is to be anything but guess-work. The aim of this book necessitates, of course, the suggestion of a large variety of drugs which the patient would often doubtless be better without. The child must be an exceptional one who would, without an injurious tussle, take some of the mixtures recommended by Dr. Money. But as with these suggestions the reader gets an extensive selection of drugs, the alternative modes of treatment referred

to by the author are no drawback to the book, which contains much that is helpful in daily practice.

Dr. Money's descriptions are clear, and are nearly always given in good English; but when, in reference to the difficulty sometimes experienced in the administration of cod-liver oil, he says that some children frequently "raise" the oil after it has been taken, we seem to detect a trans-Atlantic phrasing that has not yet been accepted in these islands. We prefer the euphemism of an American lady, who said to a friend of ours upon hearing that he was always ill on board ship: "Does your nausea take action?"

Archives of Surgery. By JONATHAN HUTCHINSON, LL.D., F.R.S. 1889-90. London: J. & A. CHURCHILL.

This quarterly periodical, conducted, and written almost entirely, by Mr. Jonathan Hutchinson, has recently been added to our list of Exchanges. It is a most valuable publication, characterised by Mr. Hutchinson's well-known breadth of view and clearness of diction. It is not confined to an exposition of surgery only; but, in addition to a masterly philosophical dissertation here and there, includes many other topics on which Mr. Hutchinson is a recognised authority. It is well printed and admirably illustrated; and in conjunction with Dr. Richardson's *Asclepiad* and Dr. Byrom Bramwell's *Studies in Clinical Medicine*, should act as an incentive to others of wide experience and untiring industry to make common property of their stores of knowledge and of clinical material.

We hope Mr. Hutchinson will not limit himself to the three years' issue at which he hints in his prefatory note.

Annual of the Universal Medical Sciences. Edited by CHARLES E. SAJOUS, M.D. Five volumes. Philadelphia: F. A. DAVIS. 1890.

It is a genuine pleasure to record that this stupendous work, now in its third year, maintains the high character of the previous issues, and indeed in some parts surpasses it. The volumes

for this year were somewhat delayed, owing to the fact that many of the editor's co-workers were attacked with influenza; but Dr. Sajous is to be congratulated on the way in which he overcame all his difficulties, and upon the co-operation of printers and illustrators who have all combined to present an attractive summary of recent medical work in all its branches. Without this publication, a man must be practising his profession at a disadvantage.

With each succeeding year the work is undergoing improvements more and more in the direction of rendering it of the greatest possible practical service; and its value is considerably enhanced by the numerous and excellent illustrations, coloured and uncoloured, with which it abounds.

The profession is under great obligation to Dr. Sajous and his helpers.

Hygiene. By LOUIS C. PARKES, M.D. Second Edition. London: H. K. LEWIS. 1890.

It must have been highly satisfactory to Dr. Parkes to have had so soon to prepare a second edition of his book, which we noticed favourably upon its first appearance last year. The usefulness of the work has been increased by correction and addition.

A New Theory of Chloroform Syncope. By ROBERT KIRK, M.D. Edin. Glasgow: JOHN THOMLINSON. 1890.

The author says in the preface: "Nothing but a strong conviction of being in the right could justify the author of the following pages for expressing views which must give a violent wrench to preconceived opinions, and which will almost certainly be met with opposition from all parties. . . . In justice to himself, and as some explanation of the revolutionary statements here made, it may be added that he believes very few men living have devoted more time and study to the subject than he has done."

We give the new theory in the author's own words:

"The new theory takes its starting-point from the hypo-

thesis that there must be an effect produced by the vapour on the pulmonary mucous membrane, and that we have this also to reckon with. . . . If there be this action on the pulmonary mucous membrane, the agent must be regarded as two forces acting at two several points, one without and the other within the circulation; and the resulting phenomena are to be ascribed to the action and reaction of these two forces, and to the varying degrees of intensity with which they operate at different stages of the inhalation."

The author considers that the action of chloroform upon the circulation may be likened to the effect of a tourniquet upon a large artery, and that its sudden withdrawal will be attended with "the same liability to syncope as would be the sudden removal of the tourniquet."

The practical outcome of the new theory is, that the author recommends the following method of administering chloroform: He requires the apartment to be heated to 65° or 70° F., and has two towels thoroughly warmed and dried at the fire. Two drachms of the liquid are poured on one of the towels, which is then held closely to the nose and mouth; and this dose is repeated in little more than a minute, and always in less than two minutes. Each successive dose is poured on a different part of the towel, not cooled by previous evaporation, which is then reversed so suddenly that the patient never gets a breath of air unimpregnated with the proper percentage of the anæsthetic. He watches the bottle and the towel, and pays nothing but an incidental attention to the pulse or respiration, satisfied that nothing can go wrong with these, short of the deepest surgical anæsthesia.

We cannot say that the author has thrown any new light upon the difficult problems of chloroform anæsthesia, and we are afraid that his method of administration will no more prevent accidents from occasionally happening than any other method.

Our own opinion is in accordance with the views so well stated by Dr. Wood of Philadelphia, in his paper delivered before the recent Berlin Congress:

1. That the use of any anæsthetic is attended with an appreciable risk, and that no care will prevent an occasional loss of life.
2. That chloroform acts much more promptly and much more powerfully than ether, both upon the respiratory centres and the heart.
3. That the action of chloroform is much more persistent and permanent than that of ether.
4. That chloroform is capable of causing death, either by

primarily arresting the respiration, or by primarily stopping the heart; but that commonly both respiration and cardiac functions are abolished at or about the same time.

Dental Surgery. By HENRY SEWILL, M.R.C.S., L.D.S. Eng. Third Edition. London: BAILLIÈRE, TINDALL & COX. 1890.

This work has been entirely remodelled and very much enlarged, greatly to its advantage. It does not profess to replace the larger text-books of dental surgery; yet it may be read with advantage by every student, who at the commencement of his work can have nothing better for providing him with a theoretical basis for the practical work with which he will be occupied later. As a book of reference for the general practitioner it is excellent. It is all well arranged, the subjects being dealt with in a sequence and way which make reference easy.

The chapter on Caries, the author's special subject, is really a very scientific and thorough treatise, containing the result of much original research. The photo-micrographs are scientific and beautiful additions to the early chapters. The book is well done in every way.

The Care of the Skin. By F. AUGUSTUS COX, M.B. London: ALEXANDER & SHEPHEARD. 1890.

This is a thin book of about 50 pages, with pleasantly-written accounts of various kinds of baths, and with some wise and timely observations on the use and abuse of soap, of which, it is a comfort to find, no special maker is named. The shallow chapter on "Diet" might well have been omitted.

Notes on Preparations for the Sick.

Exalgine.—B. Kühn, London.

This new analgesic has now established itself in the list of remedies of which morphia is the chief and indispensable but not always admissible.

Since Professor Fraser published his favourable results from the action of very small doses of half a grain and upwards, the drug has come into demand, but the results are not always satisfactory. Nothing is more difficult than to estimate the value of any drug in relieving minor degrees of pain not severe enough to require a more powerful anodyne like morphia. We suspect that many of the marvellous results brought about by doses of half a grain to two grains of exalgine have been due to other than the anodyne effects of the drug; viz., "the fallacies in estimating therapeutic effects when reliance has almost solely to be placed on the statements of patients."

In an article on Exalgine in the *Medical Press and Circular* (February 26th, 1890), Dr. Alfred S. Gubb points out that the only precautions to be observed in prescribing the drug are the following:

1. To commence with doses not exceeding from two to five grains (or even less).
2. Never to give more than from ten to twelve grains in the twenty-four hours.
3. To consider the febrile condition as a formal contra-indication.

It can be given as a powder in wafers or "cachets." Though but sparingly soluble in cold water, it is readily dissolved in the stomach, owing to the acidity of the gastric juice, a fact ascertained experimentally by M. Gaudineau. The most convenient form, however, in which to order exalgine is as a mixture, the drug to be dissolved in a small quantity of spirit before adding the water.

The formulæ most employed are the following:

℞ Exalgine, gr. xij;
Spirit of peppermint, q.s.;
Syrup of orange flowers, ʒj;
Cinnamon water to ʒvj.

℞ Exalgine, gr. xij ;
Rum or whisky, ʒss ;
Dissolve and then add—
Simple syrup to ʒj ;
Distilled water, ʒvj.

℞ Exalgine, gr. xij ;
Tincture of orange-peel, ʒij ;
Syrup, ʒss ;
Distilled water to ʒvj.

A tablespoonful of either of these mixtures thus contains one grain of exalgine.

Our own experience of this drug would not lead us to rely on it when immediate steps for the relief of severe pain are required. It is, doubtless, a useful drug, and may frequently enable the patient to dispense with the more active analgesics. An addition to our arms for the combating of pain is always welcome; and this new one will have a range of utility, although that range seems likely to be limited to the minor degrees of evanescent pains for which something must be done, but which are not severe enough to require the more trustworthy but objectionable alkaloids of opium.

The Standard Malt Extract.—The Standard Malt Extract Company, London.

This preparation is said to be made exclusively from the finest English malt is guaranteed to be absolutely pure, and to be, in diastatic power, at least three to four times the strength of any other extract. As the presence of Diastase constitutes the chief value of all malt extracts, and analysis shows that the preparation contains an exceedingly large amount of the amylolitic ferment, we cannot doubt that its worth as a digestive of starchy foods is great. The maltose and soluble phosphates give it also an appreciable nutritive power in addition to its value as a digestive of other foods.

The combination with cod-liver oil is well known to be of the greatest value in consumption and other wasting diseases.

Cocoa Essence.—Cadbury Brothers, Birmingham.

In hardly any respect has there been greater progress of late years than in the better quality and increased purity of food. Accum's celebrated treatise, *Death in the Pot*, was

once rigidly true; but not in our day. Everything which the unhappy Englishman bought was liable to adulteration: his clothes were not what they professed to be; his food was falsified to such a degree, that whatever else it might be, it certainly never was what it purported to be, and what he had a perfect right to expect it was; his sugar was rich in sand; his coffee was mixed with clay imitations; his tea might never have known any other clime than that of his native land; as for his spices, the chemist—most unscrupulous and ingenious of men—had more to do with their preparation than the consumer would have cared to hear. As for actual figures, a distinguished medical author in the *Quarterly Review* once stated, and supported his assertion with apparently incontestable facts, that 750,000 pounds of impure tea were sold in England every year. Were not the subject horrible and revolting, it would be possible to bring forward such an array of adulterations that one might well ask what analysts and medical officers of health were doing, and what could possess the public to submit to such scandalous imposition? We hope that matters are somewhat better now, but we are anything but convinced; for whenever an inquiry is made, the results are very far from satisfactory, and it is still the exception, not the rule as it ought to be, to find that the goods offered by even the best firms are what they should be. We do not regard all adulterations as equally heinous—no such thing. The substitution of flour for a more expensive and valuable article is a fraud, true, and should be severely punished; but it is not injurious. When, however, it comes to potent chemicals being systematically added, what words can sufficiently convey our indignation? We have of late seen enough to make us suspect that much still goes on which would not bear the light; and that a book, remarkable for the deep insight it would give into human villainy on the one hand, and human long-suffering and stupidity on the other, could be put together.

Medical practitioners are often appealed to for an opinion by their clients; and it would be well indeed were they to study the present subject a little more carefully, and to set their faces resolutely against all adulterations, no matter whether that adulteration only consisted of the substitution of cheaper for dearer articles, or went the length of subjecting the consumer to a course of severe medical treatment of a kind for which he had no need.

Bad as were the adulterations of tea, coffee, sugar, spices, and flour, it was found that cocoa, which is now coming into such general use, was even less often to be got pure than

most other articles. These adulterations mainly consisted of sugar, starch, and flour; red colouring matters were not infrequent, while ferruginous earths were also commonly found; although brick-dust—which we believe Dr. Parkes thought was used, at least his words will bear that construction—never was mixed with cocoa, at least so we are assured by eminent manufacturers.

Cocoa of the most excellent quality and of absolute purity is now to be bought at very moderate prices, and no purchaser need be at a loss to get an article to which the severest tests can be applied and which will come out triumphantly from the ordeal.

Nevertheless, we were startled not long since at receiving a pamphlet, bearing on its front page the names of some distinguished chemists, and addressed to the *medical profession alone*, vaunting some well-known foreign-manufactured cocoas, which were distinctly stated to be freely adulterated and to contain a considerable addition of alkaline salts. Surely medical readers do not need to be reminded that soda and potash in free doses cannot be taken with impunity day after day. The healthy body does not require daily doses of drugs—valuable, no doubt, in real emergencies, but injurious when indulged in at other times. But we are not so much concerned with the actual injury likely to be done by the adulteration, as with the principle involved. The recent great improvements in the preparation of cocoa by removing the superfluous oil has so much increased the solubility of this nutritious beverage, that the last excuse for the addition of alkalies and starch is gone; and the presence of these salts, besides being possibly deleterious to some constitutions, cannot answer any purpose whatsoever, except to give an appearance of fictitious strength to the resulting infusion or decoction.

Our contention in short is, that anything which, like coffee, tea, or cocoa, purports to be absolutely pure, should always be offered to the general public unadulterated. Whatever we may think of mixtures of coffee or cocoa, we do not feel called upon to denounce them as long as it is clearly understood that they are mixtures, and do not profess to be pure, though the public would obviously gain were it in all cases distinctly stated of what the mixture consists. We trust that the profession will recognise its duty, and do its utmost to discountenance the use of all adulterated articles whatever defence of medication may be offered. Cocoa should be perfectly pure, like sugar, spices, bread, and a hundred other foods; and any encouragement of more or less

medicated and adulterated foods and drinks, though it may not be a crime, is certainly a sin. We are determined to contend in all legitimate ways for absolute purity; we shall at any rate fight against all additions not imperatively demanded by the exigencies of manufacture. Our remarks must not, however, be supposed to apply to chocolate-creams and other preparations of manufactured cocoa, as long as they only consist of wholesome sugar and flavouring ingredients, and are understood to be mixtures.

Cadbury's **Cocoa Essence** is described as a genuine cocoa about three times the strength of the best homœopathic or prepared cocoas, in which the mass of fatty matter, comprising fifty per cent. of the cocoa-nib, is disguised by the addition of arrowroot, sugar, &c.

Why any cocoa should be called homœopathic, we are at a loss to understand, and it is much to be desired that so meaningless or misleading a name should be discarded. Perhaps the late Andrew Wynter, whose horror of adulteration was one of the noblest traits in his fine character, did not exaggerate when he wrote that, "as far as we can see, what is called homœopathic cocoa is only distinguished from other kinds by the small quantity of that substance contained in it."

The cocoa essence makes an agreeable beverage, refreshing and nutritious; and is easily prepared by the addition of either boiling water or milk. It has recently been strongly recommended by Dr. William Faussett as of use for the feeding of infants, being cheap, simple, and readily available. He states, "that as cocoa contains all the elements indispensable for the growth and development of the body, and can always be presented in a fluid form, it is, next to milk, preferable to all other natural substances as an article for infant aliment."

PERISCOPE.

MEDICINE.

Polyorromenitis, or "Concato's Disease."—We had feared that the flowers which bloom in the spring would have come and gone, dissipating their fragrance and disarticulating their petals beneath the arid sun of July, without the announcement of a new disease. Our fears were groundless, however, thanks to the rich pathological resources of Italy and the keen observations of Dr. Concato, of Genoa. In the *Rivista clinica e therepeutica*, of February, 1890, this author describes a series of cases, presenting, as he thinks, new and peculiar symptoms. The patients suffer from a progressive and malignant inflammation of various serous membranes, the disease finally assuming the aspect of a severe type of pneumonia. In one case, for example, there was a peritonitis, double pleuritis, and beginning pericarditis. Death occurred on the thirteenth day. The autopsy showed fresh adhesions between the pleural surfaces, with fibrinous exudates in the form of pseudo-membranes above, and of a solid precipitated mass at the base. In the other cases, of which there were five, there was also found fibrinous exudates in the pleural cavity, with evidences, less marked, of peritonitis and pericarditis. The peculiarity of the cases was the disproportion between the severity of the symptoms and the post-mortem findings, which were mainly those of a dry pleurisy. Aside from absence of sputum the cases resembled, clinically, those of pneumonia.

A bacteriological study of the cases by Dr. Bozzolo has given as yet negative results.

In justice to Dr. Concato it should be said that he did not propose the name of "Concato's Disease," but suggests the more scientific one of "polyorromenitis," which is interpreted as meaning a "phthisis of serous membranes." Dr. Galvani Ercoles, however, patriotically prefers to call this Italian trouble "Concato's Disease."

There will always be enough doctors to supply all new diseases with distinctive proper names; but we sometimes

fear that this richness in onymic material is being drawn upon too freely. It takes a little practice to say "polyorromenitis" without stumbling, but with proper self-restraint and considerable patience it can be done; and if the esteemed Signor Concato has really found a new disease, we should recommend to systematic writers and teachers practice with the Greek derivative rather than a timorous yielding to the eulaliac ease of pronouncing the perhaps immortal name of Concato.—*Medical Record*, August 2nd, 1890.

L. M. G.

THERAPEUTICS.

Intestinal Antisepsis.—The subject of intestinal antisepsis is not new to the readers of this journal, nor, we trust, to the profession in general. Its importance, however, is certainly not fully appreciated, if one may judge from the absence of all reference to it in recent discussions on the disease—typhoid fever—in which it is most surely indicated. This would be pardonable if intestinal antisepsis, instead of being at the command of every practitioner, were an ideal to be attained by the therapeutics of the future.

The literature on this important subject is mostly of foreign birth or extraction, and the leaders of medical thought in this country, with few exceptions, seem indisposed to admit what is in Europe generally regarded as an accomplished fact.

No one can deny that the intestine is a species of laboratory in which are manufactured poisons of the most virulent nature, and that the chief barrier against their fatal invasion of the general circulation is the liver. This barrier may, however, be forced, and this happens when the liver is overcome by an excess of leucomaines, or, on account of functional disorder—*hepatic inadequacy*, so to speak—is unable to dispose of a normal invoice of these products.

These facts are no sooner stated than acknowledged; indeed they are property common to the layman and the physician. The association between such signs of systematic poisoning as ill-humour, hypochondria, and constipation, is proverbial, and no one has been more keenly appreciative of the fact than Voltaire, who terminates an admirable description of the good nature and benevolence of those whose bowels are regular with the statement that a refusal from the mouth of such a person is more gracious than an assent from one who is constipated.

In a recent article on the treatment of diarrhœa and

constipation by Dujardin-Beaumetz (*Bulletin Générale de Thérapeutique*, April 15th, 1890), the importance of intestinal antisepsis in both these conditions is insisted upon. The fact is not generally appreciated that purgation and antisepsis are, to some extent, interchangeable terms, and that the relief which follows the employment of a cathartic is not so much due to the mechanical effect of "unloading the bowels" as to the expulsion of substances which are slowly poisoning the system. These substances not only act in the manner just indicated, but through their irritating effect on the intestine they tend to keep up a diarrhœa which, in its onset, may have been highly conservative. From these facts may be explained the curative effect of a purge in the early stages of some forms of diarrhœa. When, however, a catarrhal condition is fairly established and occupies a considerable portion of the intestinal tract, the indications are not fully met by cathartics. Under such circumstances admirable results are often obtained by drugs whose favourable action can only be explained by intestinal antisepsis. Among such are thymol, naphthol, and salicylate of bismuth. There is none better than the first mentioned, which is perfectly innocuous in large doses and possesses an antiseptic power four times greater than that of carbolic acid. Its value as an antiseptic seems to have been more fully recognised in Italy than elsewhere, and has been endorsed by Martini, Bufalini, Testi, and others. In our opinion it is, when properly administered and in suitable doses, *facile princeps* among intestinal antiseptics. Salicylate of bismuth is also an admirable remedy of this sort, and is the one most approved by Dujardin-Beaumetz in the article mentioned. He usually administers it in capsules in combination with magnesia, sodium bicarbonate, prepared chalk, phosphate of lime, beta-naphthol, or charcoal.

It is not for want of suitable drugs that intestinal antisepsis is not more systematically carried out. The difficulty is that the indications for their employment are not generally recognised. Systematic therapeutics of any description is the outcome of systematic diagnosis, and the latter, so far as gastro-intestinal affections are concerned, is of very recent date.

There are, as Dujardin-Beaumetz points out, at least three distinct varieties of auto-intoxication proceeding from the gastro-intestinal tract. First, there are the various symptoms, too numerous to be here detailed, dependent upon habitual constipation. Secondly, a more acute condition, of which the chief symptoms are a coated tongue, loss of

appetite, and sometimes fever. This is the *embarras gastrique* of the French, and is caused by the ingestion of improper food, or of "*toxines*" contained in the atmosphere. The latter statement is based on the fact that the symptoms referred to often arise after a prolonged stay in a poorly ventilated and overcrowded apartment, or in a dissecting-room. The third variety is accompanied with vomiting, and is generally known in this country as acute indigestion. It is significant of more acute poisoning or of a more susceptible organism, and consequently is more frequently observed in children.

The treatment of these different forms of poisoning, whether it be exclusively dietetic or partly medicinal, is fundamentally antiseptic, and the general recognition of this fact will alone serve to bring into general use a line of treatment which is now habitually followed by a minority.—*Medical News*, June 7th, 1890.

L. M. G.

Mercury during Albuminuria.—The question as to whether mercury is likely to be injurious in cases in which albumen is present in the urine, is one of much importance to the surgeon as well as the physician. Many surgical complications occur to patients who are the subjects of chronic renal disease, and conditions are often presented in which, were there not a prejudice against it, mercury would seem to be desirable. I have myself chiefly been concerned with this dilemma in cases of syphilis, and have long been in the habit of prescribing mercury without much regard to the state of urine. Nor have I ever seen reason to regret doing so. The following quotation from a Report on Medicine by the late Dr. Prichard, of Bristol (1835), is not without its interest in reference to this question. Dr. Prichard refers to cases in which dropsy was the condition requiring treatment.

"It seems to have been the opinion of Dr. Bright, and the observation was strenuously enforced by Dr. Blackall, that mercury is injurious in all cases of this description. I shall take the liberty to state that this question has been brought to the test of experiment, during several years, at the Bristol Infirmary. In numerous cases of dropsy, with albuminous urine, the treatment advised by Dr. Blackall has been fully tried, and it has failed to produce a cure; but the same cases terminated in recovery under a moderate use of mercurial remedies."—Mr. Jonathan Hutchinson in *Archives of Surgery*, July, 1890.

L. M. G.

SCRAPS

PICKED UP BY THE ASSISTANT-EDITOR.

"The Turn of Life."—A subscriber to the *Journal* tells me that recently in a form of proposal for life-insurance the following was given as one portion of the applicant's family history:

Original number of sisters . . . *1.*
Age at death . . . . . *55 about.*
Cause of death . . . . . *Eternal life. Dr. S****** attended her.*

The Xth International Medical Congress.—A local doctor just back from the Congress tells me that a Berlin paper contained the following "Programme of Papers in the Special Department." He does not think, however, that any of the papers were read.

Prof. Dr. VON MOLTKE: "On the bleeding which may be applied to whole nations."
Prof. MIGUEL: "On the heaping up of gold molecules in the arteries of States."
Dr. BRÖMEL: "On the bad results of the iron cure in international diseases."
Prof. Dr. BISMARCK: "On urgency of speech as a symptom which follows vanishing omnipotence."
Dr. SALISBURY: "On the colonial fever."
Dr. OFFICIOSUS: "On removal of sleeplessness by the use of the *Imperial Gazette*."
Prof. LESSEPS: "On the antiseptic resection of isthmuses and the cupping of shareholders."
Dr. MILAN: "On the central disturbances which occur when one takes off the crown in a hurry."

Longevity.—In connection with the pseudo-centenarianism of the Elgin "Methuselah," whose death was recently recorded (*Pall Mall Gazette*, August 26th), the following story will be read with interest:—It is well known that people seldom die in Ochiltree. When any one there gets tired of life, he generally finds it necessary to remove to another parish. Many of the inhabitants however do not seem ever to tire of life, and so remain on their native soil till their ages are past all reckoning. Colonel Andrew M'Dowall, when he returned from India, came one day upon an old man sitting weeping on a big stone by the roadside. When he came up, the old man rose and took off his bonnet and wiped his eyes, and said, "Ye're welcome hame again, laird." "Thank you," said the Colonel, adding, after a pause, "I should scarcely know your face; aren't you Nathan M'Culloch?" "Ye're richt, 'deed!" said Nathan. "It's just me, laird." "You must be a good age now, Nathan," said the Colonel. "I'm no verra aul' yet, laird," was the reply; "I'm just turn't a hunner." "A hundred!" said the Colonel, musing. "Well, you must be all that. But the idea of a man of a hundred sitting blubbering in that way! What could you get to cry about?" "It was my faither licket me, sir," said Nathan, weeping again, "an' he put me oot, so he did!" "Your father!" said the Colonel, astonished. "Is your father alive yet?" "Leevin'?

Ay," replied Nathan, "I ken that the day tae my sorrow." "Where is he?" said the Colonel. "What an age he must be! I should like to see him." "Oh, he 's up in the barn there," said Nathan, "an' no in a horrid gude humour the noo aither!" They went up to the farm together, and found the father busy threshing the barley with the big flail and going on at a fearful rate. Seeing Nathan and the laird coming in, he stopped and saluted the Colonel, who, after inquiring how he was, asked him what he had struck Nathan for. "The young rascal," said the father, "there 's nae dooin' wi' him; he 's never oot o' mischief! I had tae lick him this mornin' for cloddin' stanes at his grandfather!"

Anatomy and the Etymologists.—E. R. P., writing to the *Journal of Cutaneous and Genito-Urinary Diseases*, said: "A member of the Bar, distinguished alike for his eminence as a jurist and his profound general erudition, gave me recently the etymology of a familiar word that few can correctly spell and still fewer trace to its origin. He said the Roman diminutive *ette* contracted to *et* abounds in such words as streamlet, a little stream; rivulet, a little river, etc.; while the Saxon diminutive *ock* serves a similar purpose in such words as a hillock, a little hill, and bullock, a little bull, and plural, bullocks, little bulls. So it appears at last that the familiar name by which the schoolboy calls his testicles does not belong to the realm of slang, but descends to us straight from the shelves of mediæval classics." Benjamin Lee, commenting upon this, observed that to make the vulgar name for the testicles identical with bullocks "involves an error in orthography and is also entirely inadequate. The word as in common use is spelled correctly with 'o,' not 'u.' The true descent of the word is from 'boll,' which means a seed-vessel; whence, naturally enough, 'bollocks,' little seed-vessels. It is Saxon, pure and undefiled, and not a vulgar play upon words; and, moreover, it is strictly and scientifically correct." Neither of these writers is quite accurate. Readers of the Old Testament are familiar with the passage, "The barley was in the ear, and the flax was bolled" (*Exodus* ix. 31), where the word means "podded for seed." But the root goes further back than this meaning, which was a derived one. As Aldis Wright says *(Bible Word-Book)*, the word is etymologically connected with ball, etc., and the root expresses the idea of roundness, swelling. In connection with this, these extracts from the *Catholicon Anglicum*, "an English-Latin Wordbook, dated 1483," will be of interest: "a Balloke_stone; *testiculus*, *testiculatus participium*; a Ballokecod; *piga*, *imembrana*;" to which Mr. Sidney J. H. Herrtage, the editor of the Camden Society edition (1882) of the *Catholicon*, appends this note: "'*Hic testiculus*, a balok-ston; *hic piga*, a balok-kod,' Nominale MS. 15th cent. '*Couille*, a cod, bollock, or testicle,' Cotgrave. It appears from Palsgrave's Acolastus, 1540, that *ballocke-stones* was a term of endearment." But the instance from Cotgrave is wrongly cited. At least, in the 1632 edition it is given thus: "Couille: f. *A mans yard; also (but lesse properly) the cod, ballocke, or testicle . . .*" and I have not found "bollock" anywhere. As the English equivalent of "Couillon de chien," Cotgrave gives "Balock-grasse" along with "Dogs-stones," and other popular names of several species of orchis. The *New English Dictionary* has under "Ballock" several quotations of varying forms of the word, of which one of the most interesting is from *Leviticus* xxii. 24, where Wyclif read "kitt and taken awey the ballokes is," which the A.V. renders merely as "cut." (For "kitt" as "cut" see quotations from Wyclif in Richardson's *Dictionary*, under "cut.") From all which it is clear that "the familiar name by which the schoolboy calls his testicles" should be spelled "ballocks."